Fig. 1

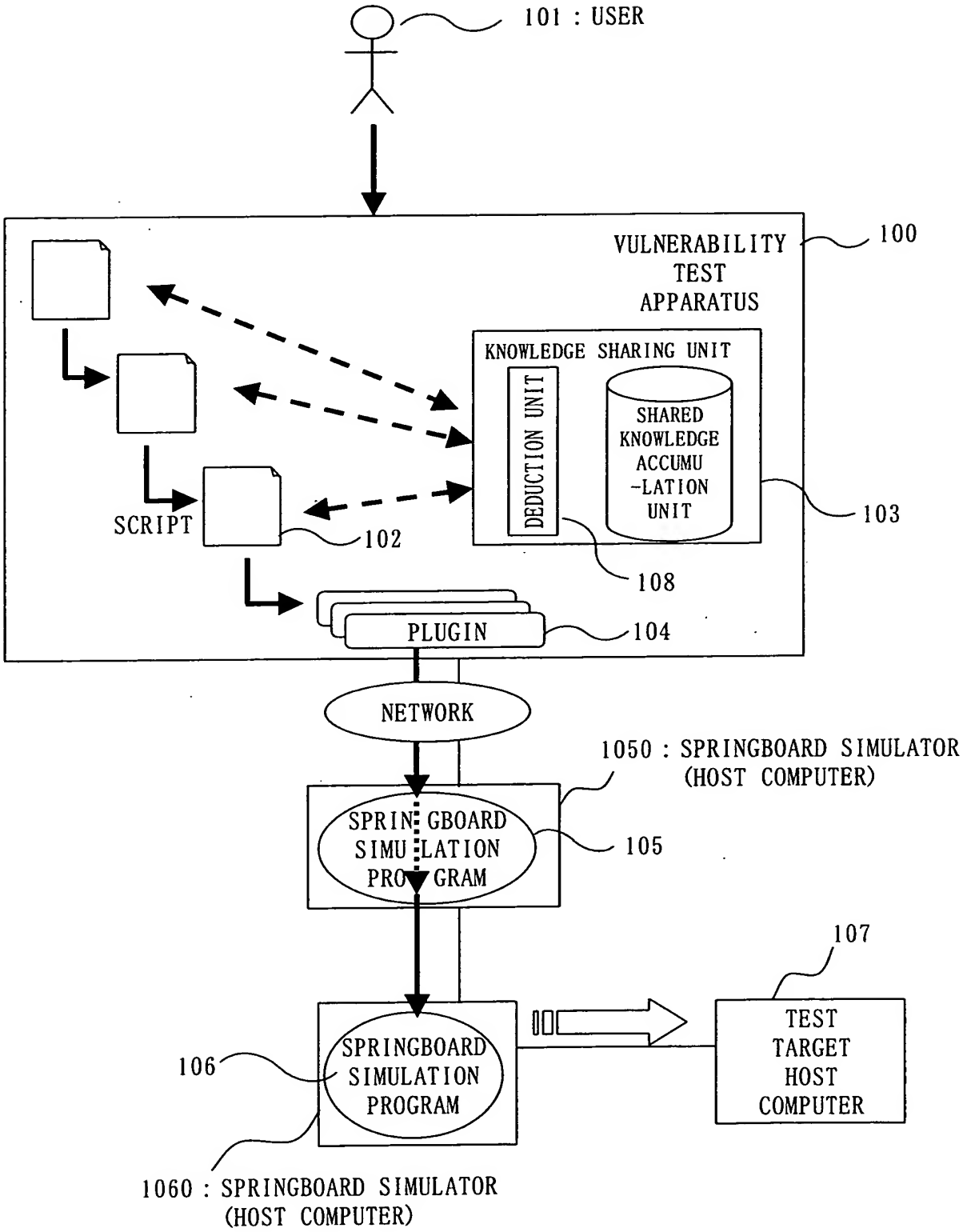

101 : USER
VULNERABILITY TEST APPARATUS
100
KNOWLEDGE SHARING UNIT
DEDUCTION UNIT
SHARED KNOWLEDGE ACCUMU -LATION UNIT
103
SCRIPT
102
108
PLUGIN
104
NETWORK
1050 : SPRINGBOARD SIMULATOR (HOST COMPUTER)
SPRINGBOARD SIMULATION PROGRAM
105
107
TEST TARGET HOST COMPUTER
SPRINGBOARD SIMULATION PROGRAM
106
1060 : SPRINGBOARD SIMULATOR (HOST COMPUTER)

Fig. 2

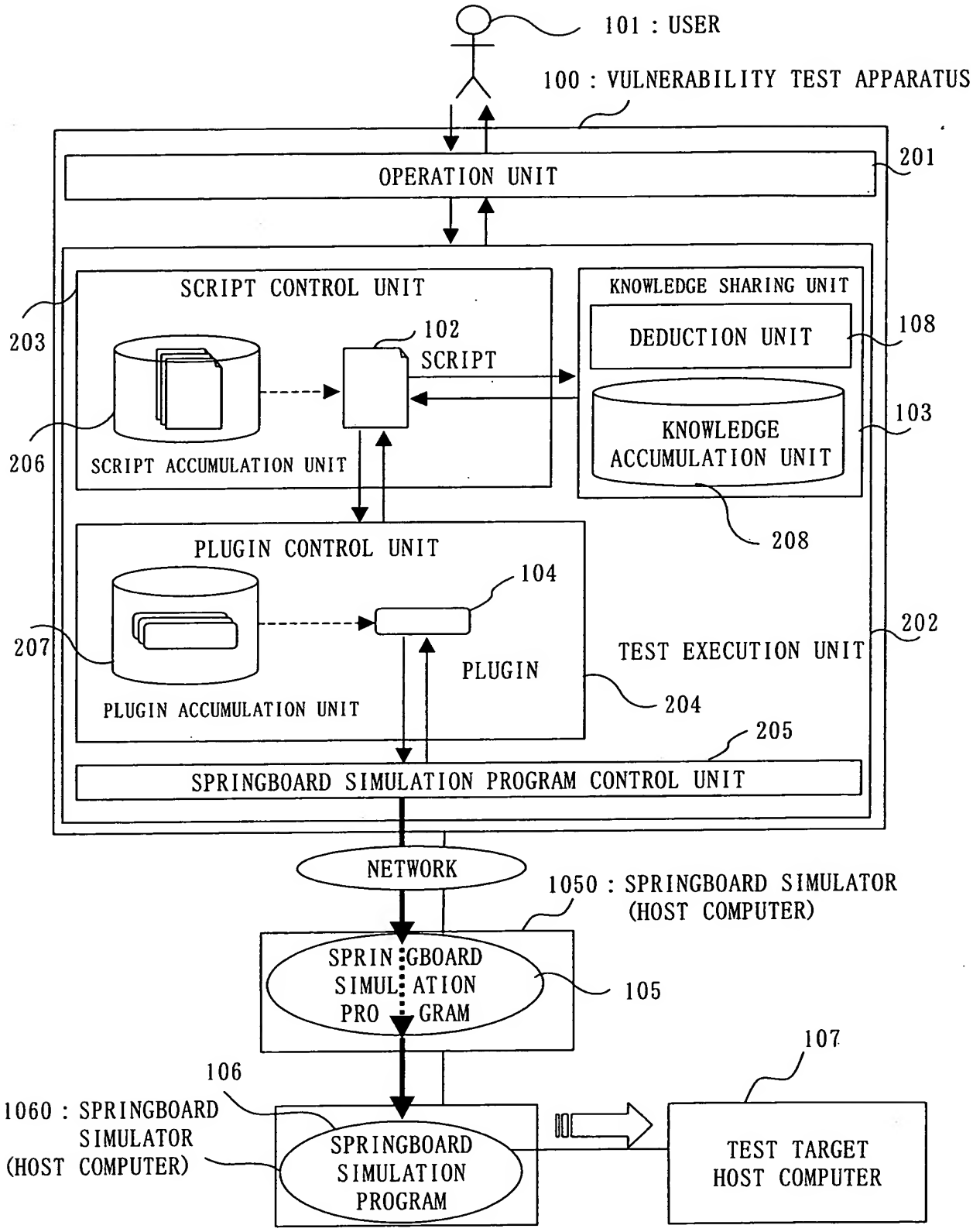

101 : USER
100 : VULNERABILITY TEST APPARATUS
OPERATION UNIT
201
SCRIPT CONTROL UNIT
203
102
SCRIPT
206
SCRIPT ACCUMULATION UNIT
KNOWLEDGE SHARING UNIT
DEDUCTION UNIT
108
KNOWLEDGE ACCUMULATION UNIT
103
208
PLUGIN CONTROL UNIT
104
207
PLUGIN
PLUGIN ACCUMULATION UNIT
204
TEST EXECUTION UNIT
202
205
SPRINGBOARD SIMULATION PROGRAM CONTROL UNIT
NETWORK
1050 : SPRINGBOARD SIMULATOR (HOST COMPUTER)
SPRINGBOARD SIMULATION PRO GRAM
105
107
106
1060 : SPRINGBOARD SIMULATOR (HOST COMPUTER)
SPRINGBOARD SIMULATION PROGRAM
TEST TARGET HOST COMPUTER

Fig. 3

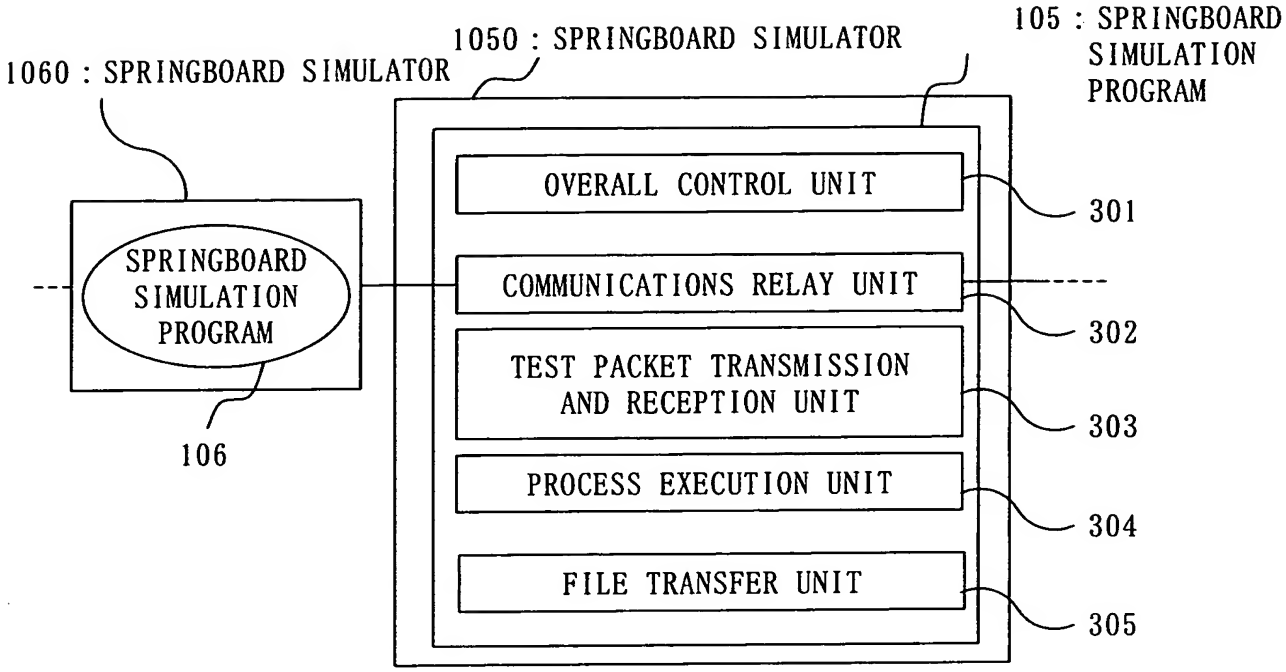

1060 : SPRINGBOARD SIMULATOR
1050 : SPRINGBOARD SIMULATOR
105 : SPRINGBOARD SIMULATION PROGRAM
SPRINGBOARD SIMULATION PROGRAM
106
OVERALL CONTROL UNIT
301
COMMUNICATIONS RELAY UNIT
302
TEST PACKET TRANSMISSION AND RECEPTION UNIT
303
PROCESS EXECUTION UNIT
304
FILE TRANSFER UNIT
305

Fig. 4

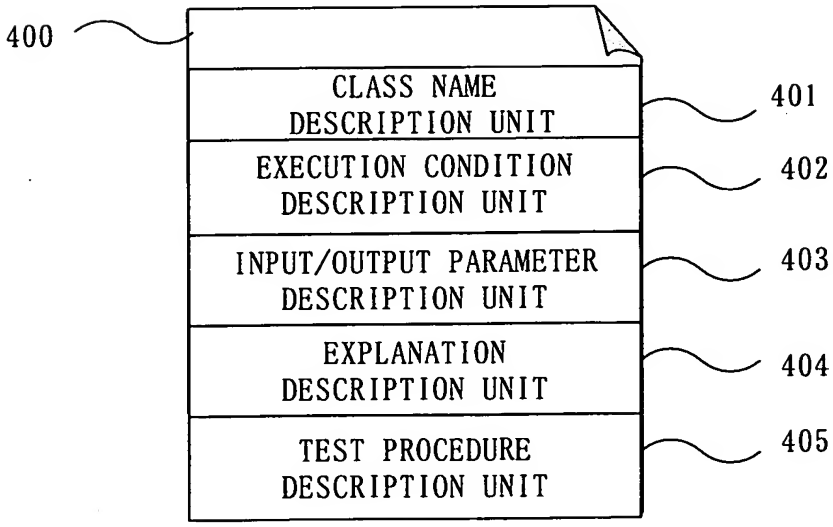

400
CLASS NAME DESCRIPTION UNIT
401
EXECUTION CONDITION DESCRIPTION UNIT
402
INPUT/OUTPUT PARAMETER DESCRIPTION UNIT
403
EXPLANATION DESCRIPTION UNIT
404
TEST PROCEDURE DESCRIPTION UNIT
405

Fig. 5

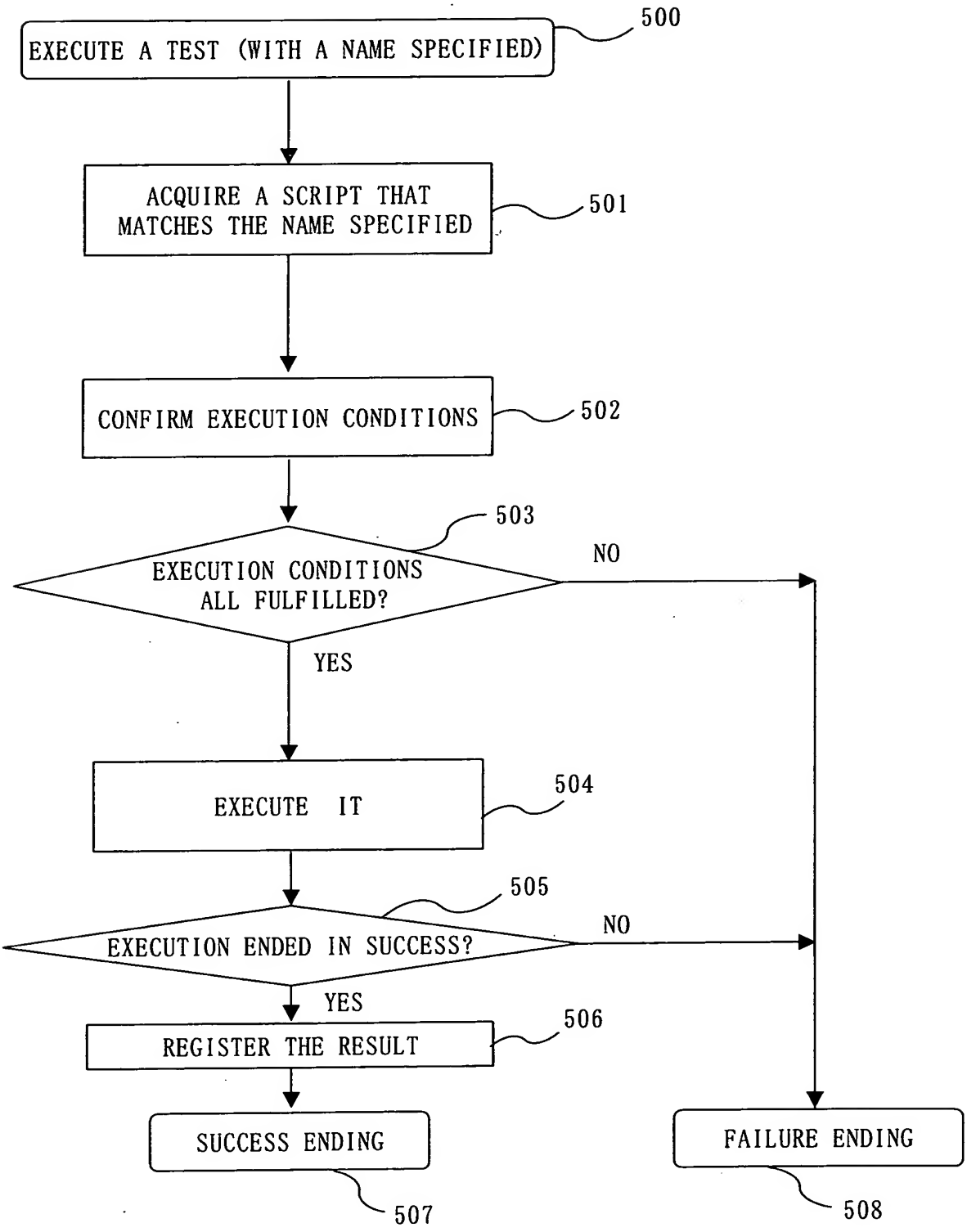

EXECUTE A TEST (WITH A NAME SPECIFIED)
500
ACQUIRE A SCRIPT THAT MATCHES THE NAME SPECIFIED
501
CONFIRM EXECUTION CONDITIONS
502
503
EXECUTION CONDITIONS ALL FULFILLED?
NO
YES
EXECUTE IT
504
505
EXECUTION ENDED IN SUCCESS?
NO
YES
REGISTER THE RESULT
506
SUCCESS ENDING
507
FAILURE ENDING
508

Fig. 6

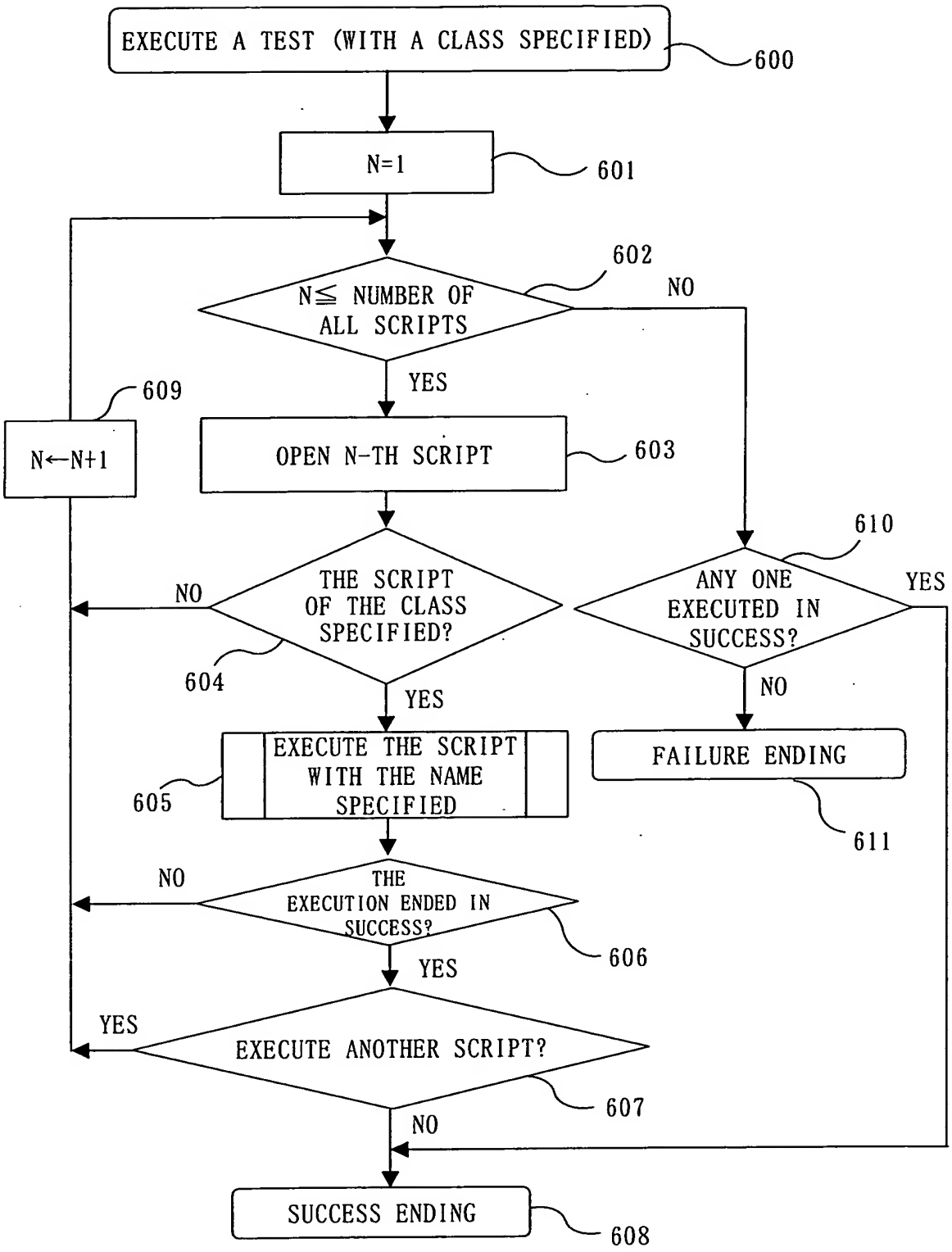

EXECUTE A TEST (WITH A CLASS SPECIFIED)
600
N=1
601
602
N≦ NUMBER OF ALL SCRIPTS
NO
YES
609
N←N+1
OPEN N-TH SCRIPT
603
610
THE SCRIPT OF THE CLASS SPECIFIED?
NO
604
YES
ANY ONE EXECUTED IN SUCCESS?
YES
NO
EXECUTE THE SCRIPT WITH THE NAME SPECIFIED
605
FAILURE ENDING
611
NO
THE EXECUTION ENDED IN SUCCESS?
606
YES
YES
EXECUTE ANOTHER SCRIPT?
607
NO
SUCCESS ENDING
608

Fig. 7

```
admin( HOST, 'root' ) :-
            os( HOST, 'UNIX' );

admin( HOST, 'administrator' ) :-
            os( HOST, 'WINDOWS' ).

web(HOST, PORT) :-
            script( 'find_web_port', [ HOST ], [PORTS] ).,
            member( PORT, PORTS ).

cgi(HOST, PORT, CGINAME) :-
            script( 'check_cgi', [ HOST, PORT, CGINAME ], _ ).
```

Fig. 8

```
# -----BEGIN_SCRIPT_PROPERTY-----
#Class:      command_exec
#Pre-condition:          web(HOST, PORT), cgi( HOST, PORT, "phf" )
#Input:      HOST        string  "TEST TARGET HOST ADDRESS"
#Input:      CMD         string  "COMMAND SEQUENCE TO BE EXECUTED"
#Output:     RESULT      string  "OUTPUT THE COMMAND EXECUTION"
#Description:            "THE COMMAND IS EXECUTED USING PHF."
#-----END_SCRIPT_PROPERTY-----

Perl BASED EXECUTABLE CODE. . .
```

Fig. 9

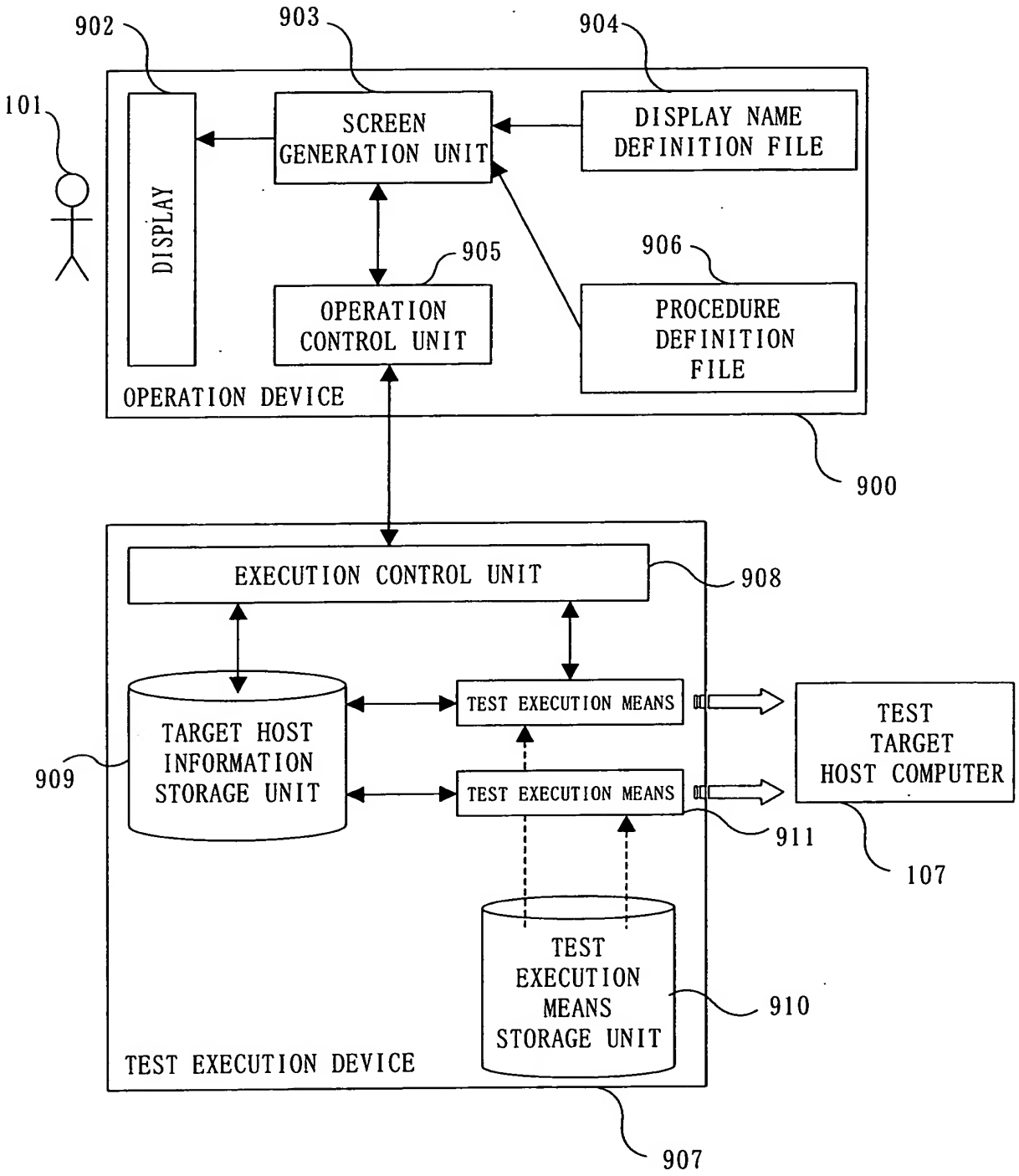
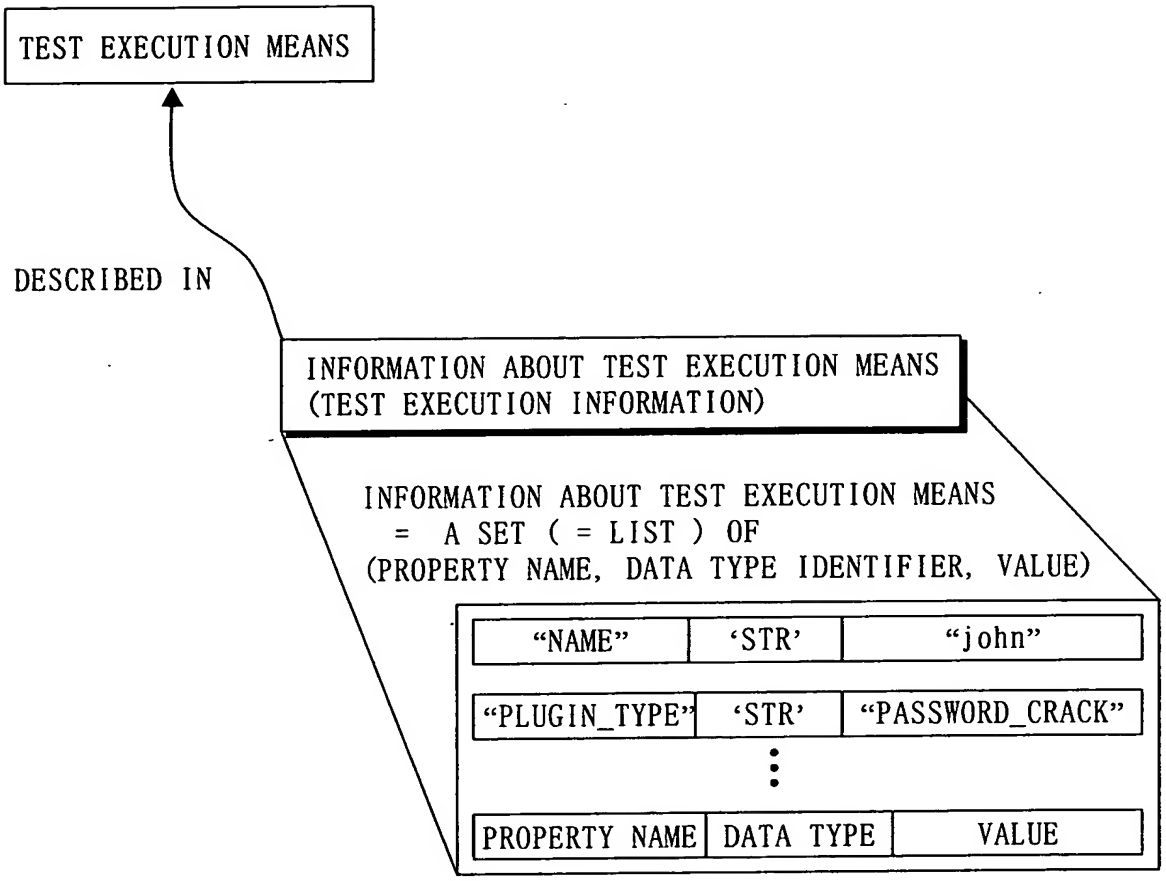

902
903
904
101
DISPLAY
SCREEN GENERATION UNIT
DISPLAY NAME DEFINITION FILE
905
906
OPERATION CONTROL UNIT
PROCEDURE DEFINITION FILE
OPERATION DEVICE
900
EXECUTION CONTROL UNIT
908
TARGET HOST INFORMATION STORAGE UNIT
909
TEST EXECUTION MEANS
TEST EXECUTION MEANS
TEST TARGET HOST COMPUTER
911
107
TEST EXECUTION MEANS STORAGE UNIT
910
TEST EXECUTION DEVICE
907

Fig. 10

```
#
# PROCEDURE DEFINITION FILE.
#

# PROPERTY NAME
PLUGIN_TYPE

#
# SYNTAX:   CATEGORY_KEY='CATEGORY_DISPLAY_NAME('¥'EXEC_TYPE)('¥'CATEGORY_DESCRIPTION)
#           EXEC_TYPE = 0(ne)/A(11)/Q(uery)

PORTSCAN=PORT SCAN Q TO SCAN A PORT ATTACKABLE ON THE TARGET HOST.

GET_FILE=FILE ACQUISITION O TO ACQUIRE A FILE SPECIFIED FROM THE TARGET.

PASSWORD_CRACK=PASSWORD CRACK Q TO EXTRACT AN ACCOUNT AND A PASSWORD FROM A PASSWORD FILE
SPECIFIED.
```

Fig. 11


TEST EXECUTION MEANS
DESCRIBED IN
INFORMATION ABOUT TEST EXECUTION MEANS
(TEST EXECUTION INFORMATION)
INFORMATION ABOUT TEST EXECUTION MEANS
= A SET (= LIST) OF
(PROPERTY NAME, DATA TYPE IDENTIFIER, VALUE)
"NAME"
'STR'
"john"
"PLUGIN_TYPE"
'STR'
"PASSWORD_CRACK"
PROPERTY NAME
DATA TYPE
VALUE